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(54) Title: SYSTEM FOR THE DISTRIBUTION OF AUDIO AND VIDEO FILES
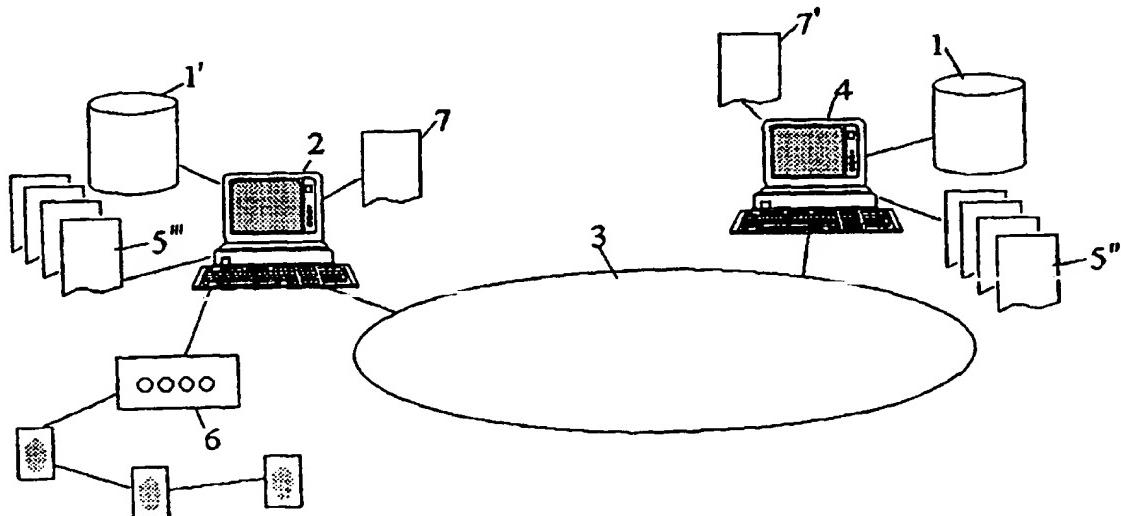
(57) Abstract

From a central database (1) audio/video files are transferred to local processing means (2). A processor (4) selects a collection of files (1') and stores these in a selection file (5'). The selection file and the selected files are transferred to the local processing means, which play the selected files. The processor periodically replaces part of the collection of local files by new files selected from the database. The processor can also select different collections of files and transfer these to the local processing means. The local processing means then comprise a local selection device for selecting selection files according to the desire of the subscriber, by means of which the files are "played" locally. For refreshing of the local files the local selection device stores the local selections and the central processor reads out those selections and replaces a part of the local collection.

System for the distribution of audio and video files

BACKGROUND OF THE INVENTION
The invention relates to a system for the distribution of
5   audio and video files, comprising a central database with
audio or video files, local processing means for processing
and reproducing such files and a transmission network for
the transmission of such files from the central database to
the local processing means.
10   A comparable system is widely known, particularly in the
domain of the "Internet", among others from WO9617451, in
which a system is described for distributing audio "clips"
via a multimedia network. The local processing means are
formed by a PC, which is controlled by processing and
15   reproducing software for audio.

SUMMARY OF THE INVENTION
The present invention proposes a number of measures for
adapting a system for distributing audio (or video) via a
20   transmission network for application as a means of
distribution for e.g. varied background music in shops,
restaurants, waiting lounges etc. So far for this purpose a
service is used in which, when one has a subscription to
that service, cassette tapes or compact discs (CDs) are
25   distributed from a central point via physical mail and the
like to subscribing shops etc. An important point is that
the music that is played in the shops etc. must be
regularly changed and "refreshed". In some cases a fairly
balanced collection of music is desired adapted to the time
30   of the day, time of the year, etc. Retail chains usually
also want that the music played is the same in all the
various locations or branches. "Free" shops like to be free
in their choice of background music.
The invention thus comprises a system for the distribution
35   of audio and video files, in particular - but not
exclusively - for supplying music (or audio) in shops etc.,

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comprising, in a central server with a central database
with audio and video files, and with local clients of the
service, viz. the shops etc., local processing means for
processing and playing of the files and a transmission
5   network for the transmission of the files from the central
database to the local processing means. The system
according to the invention comprises a processor for
selecting a collection of files from the database by means
of a selection algorithm and storing that selection in a
10 selection file, as well as for transferring via the
transmission network to the local processing means of a
subscriber of both the selection file and the selected
files themselves, in which the local selection means can
play the selected files under control of the selection
15 file.
If the system according to the invention is applied for
e.g. retail chains in which at every moment of the day the
same music should be played, it is sufficient that the
subscriber - the branch manager - can switch on or off the
20 local processing system without further influence of the
repertoire played by the processing system.
The repertoire is preferably refreshed periodically. Files
from the local downloaded collection are then replaced by
other files from a central database. Using current
25 transmission means downloading of 1 hour of music takes
around half an hour. By refreshing the local files
regularly, the reproduced music keeps its attraction for
visitors (for whom it is meant of course). In such a
periodical refreshing mechanism the processor replaces
30 under control of the refreshing algorithm periodically a
part of the collection of local files by new files, which
have to be selected again (under control of the selection
algorithm) from the database and have to be transferred via
the transmission means.
35 The system according to the invention can be used for the

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distribution of audio or video to shops etc. where - as in the preceding concept - they are locally not free in the choice of the played music or where they - contrary to the preceding - are locally free to make a choice from various

5 downloaded collections. In this last option, the processor selects on the basis of one or more selection algorithms, different collections of files and stores these selections in different selection files, which are transferred to the local processing means via the transmission network. The

10 local processing means comprise in this preferred embodiment of the invention a local selection device for selecting according to the desire of the subscriber of one of those different selection files. In this case the shop owner etc. has various collections of music available from

15 which can be chosen.
In the last option there are locally different collections of files with in total (many) more files than in the option in which locally no choice of collections could be made. The "refreshing" of the collections is here a larger

20 problem, because the time and resources required for this are limited. A considerable gain of time and resources can be obtained by having the local selection device store the selections made by the subscriber in a log file and have the central processor read out that log file via the

25 transmission network and have under its control a part of the actually used collections or individual files replaced by new, again from the database selected files.
The invention will below be illustrated by means of some figures.

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DESCRIPTION OF FIGURES
Figure 1 shows a first embodiment of the invention. A central database 1 works together or is incorporated in a computer 4. In the database 1, a large collection of (e.g.

35 MPEG or JPEG coded) audio (or video) files is stored. There

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are (sub)collections of different music styles, from
medieval chamber music to contemporary pop music and
besides music from different parts of the world. The
service which is offered by means of the system described
5   here exists in that subscribers can make a selection from
the whole range of music (the same applies of course to
video) by means of a central selection algorithm, which
selection, after being downloaded via the transmission
network 3, can be played locally on the subscriber
10   location. Furthermore, the invention comprises that the
selected files (music pieces) are regularly replaced by
other pieces, while taking into account the selection rules
given by the selection algorithm. By the latter the
selected musical genres remain the same, but the music
15   pieces are replaced within these genres. On refreshing of
music pieces it is made sure - by a refreshing algorithm -
that there is enough coherence (genre) and variation
between a replacing music piece and the musical context in
which it is placed. This applies also to the selection
20   algorithm; selection algorithm and refreshing algorithm are
thus largely congruent.
The software loaded in the central computer 4 comprises a
selection algorithm with which, using selection data as
genre, composer, instrumentation etc, a collection of files
25   (music files) is selected from the database. The file data
(such as record numbers) of those selected files are stored
in a selection file ("play list") 5. Next, the selected
files and a replica of the selection file 5' are
transferred via the transmission network 3 to the local
30   computer 2 of the subscriber and stored (1', 5'). Under
control of the selection file 5', the selected files 1' can
then be played via an audio installation 6. In this concept
the local user can only choose between playing and non-
playing of the transferred music files 1', under control of
35   file 5'. This concept is especially useful for retail

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chains etc. with a uniform corporate identity, inclusive
the (background) music.

The processor, that is the computer 4 with the loaded
software, replaces under control of a refreshing algorithm
5   periodically a part of the collection of selected files and
that have been transferred to the local processing means by
files that are again selected from the database. As said,
the correct genre is taken into account (the new files must
originate from the same genre subset as the old file) as
10   well as the variation in among others composers and
performing musicians.

If it is desired - contrary to the retail chains with
completely uniform presentation - that the local
subscribers make a choice themselves from a series of music
15   collections (5'), which are all compiled according to a
certain logic (by means of a selection algorithm), the
architecture of figure 1 is replaced by that of figure 2.
In the architecture of figure 2, the processor 4 selects by
means of one or more different selection algorithms
20   different collections of files and stores these selections
in various selection files ("play lists"), collectively
referred to with 5". Those selection files 5" are
transferred via the transmission network 3 to the local
processor 2, together with the selected files. In this
25   architecture there are consequently usually more than in
the preceding embodiment. The local processing means 2
comprise a local selection device for selecting a selection
file according to the desire of the subscriber from the
different downloaded selection files (here refereed to with
30   5'''). The said local selection device preferably belongs
to the software which is loaded on the local computer 2. By
means of screen and mouse/keyboard a choice can be made ad
libitum from one of the downloaded "play lists" 5.

Because in this option there are many more files
35   downloaded, refreshing of it requires more capacity.

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Especially when the number of files is substantial, regularly refreshing can be a problem. However, the following measure has been taken.

The local selection device, incorporated in computer 2, stores the consecutive choices made by the subscriber in a "log file" 7. The central processor 4 reads periodically those selections stored in the log file via the transmission network. Under control of the uploaded log file 7' and a refreshing algorithm, the central processor periodically replaces a part, some files, of the collection files in the local processing means 2 by selecting files again from the central database 1. Also the selection file concerned from the set 5" is edited. The new files and the edited selection file are sent to the local computer 2. The computer 2 replaces the old files in 1' and the old "play list" in 5''' by new ones. By using a log file per subscriber the number of files to be refreshed is reduced considerably, namely to the local files which have been actually selected by the subscriber.

CLAIMS

1. System for the distribution of audio and video files, comprising a central database (1) with audio or video files, local processing means for processing and playing of
5   such files and a transmission network for the transmission of such files from the central database to the local processing means, **characterised by** a processor (4) for selecting a collection of files from the database by means of a selection algorithm and storing that selection in a
10   selection file (5), as well as for transferring, via the transmission network to the local processing means of a subscriber, replica's of both the selection file (5') and the selected files (1') themselves, the local selection means being able to play the selected files via playing
15   means (6), under control of the selection file.

2. System according to claim 1, **characterised in that** the processor periodically replaces, under control of a refreshing algorithm, part of the collection of selected files by files which are selected once again from the
20   database.

3. System according to claim 1, **characterised in that** the processor selects, on the basis of one or more selection algorithms, different collections of files and stores these selections in different selection files, which are
25   transferred to the local processing means via the transmission network, the local processing means comprising a local selection device for selecting, according to the desire of the subscriber, one of those different selection files.

30   4. System according to claim 3, **characterised in that** the local selection device stores consecutive choices made by the subscriber, in a log file, the processor reading out the selections stored in the local selection device and periodically replacing part of the collection of selected
35   files by files selected once again from the database.

FIG. 1
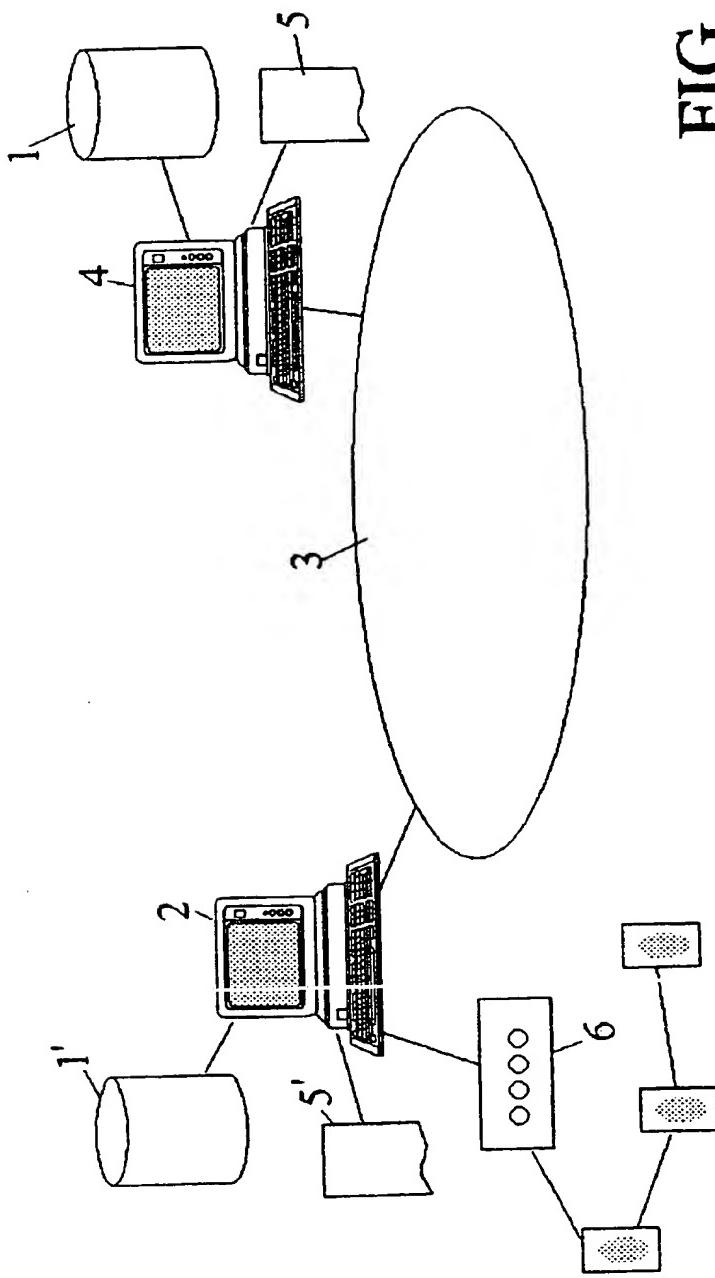
FIG. 2
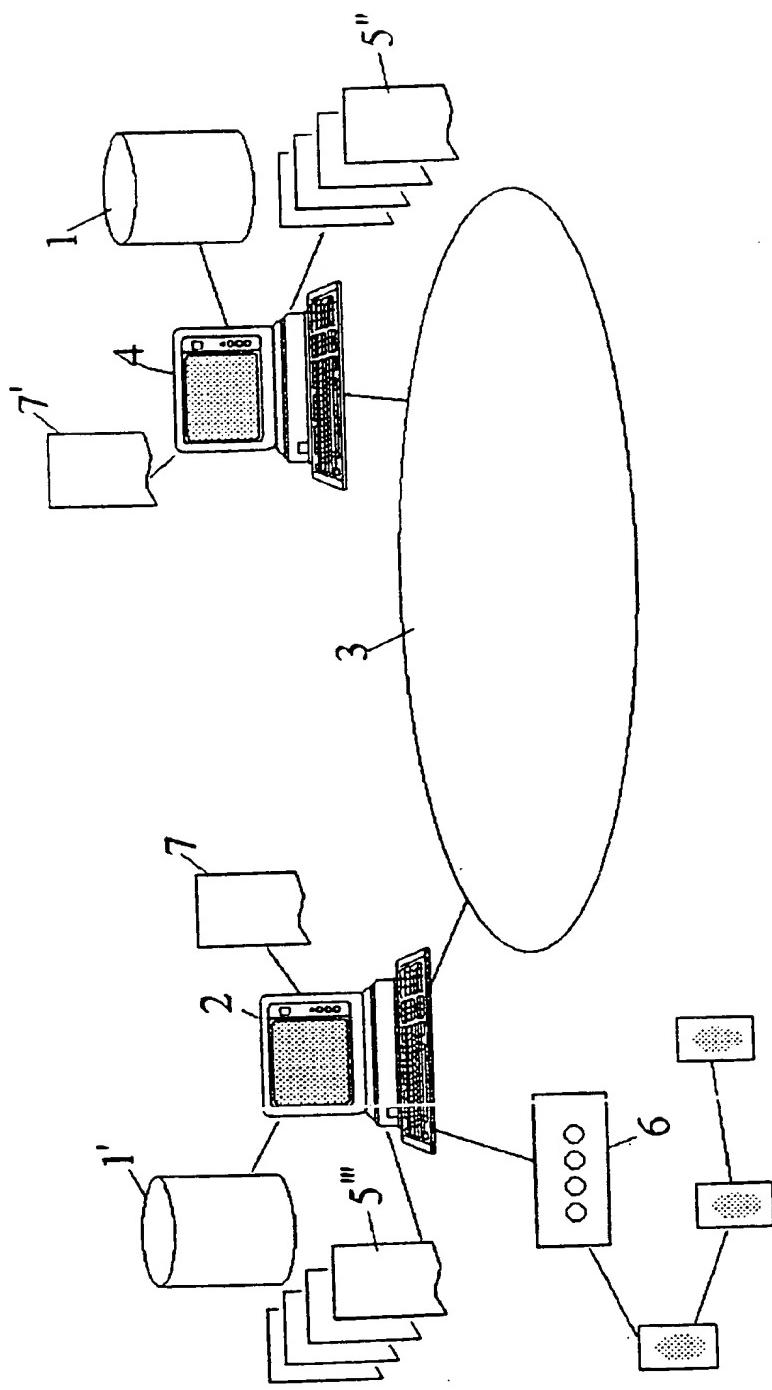
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04H1/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category°	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 93 09631 A (FINISAR CORP) 13 May 1993 (1993-05-13) page 1, line 1 -page 5, line 7; claim 1; figure 1	1
A	DE 42 44 198 A (NSM AG) 30 June 1994 (1994-06-30) column 1, line 1 -column 3, line 47; claim 1; figure 1	1
A	DE 44 40 419 A (ISSING TILMAN ;ISSING MATTHIAS (DE); ISSING LUDWIG DR (DE)) 9 May 1996 (1996-05-09) column 1, line 1 -column 8, line 34; claim 1; figure 1	1

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[v] Further documents are listed in the continuation of box C.		[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
22 December 1999	12/01/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl. Fax: (+31-70) 340-3016	De Haan, A.J.

Form PCT/ISA/210 (second sheet) (July 1992)

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
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A	US 4 789 863 A (BUSH THOMAS A) 6 December 1988 (1988-12-06) column 1, line 1 - line 64; claim 1; figure 5	1

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